

# ET Series ET4,31,F1,2020

## Thermoelectric Modules

The ET Series of Thermoelectric Modules (TEMs) are designed to operate in high temperature environments.

This product line is available in multiple configurations and is ideal for applications that operate in temperatures above 80°C. Assembled with Bismuth Telluride semiconductor material, thermally conductive Aluminum Oxide ceramics and high temp solder construction, the ET Series is designed for higher current and larger heat-pumping applications.

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#### **FEATURES**

- High temperature operation
- Reliable solid-state
- No sound or vibration
- Environmentally friendly
- RoHS compliant

#### **APPLICATIONS**

- Automotive Cooling
- Telecom Cooling
- Outdoor Environments
- Medical Heating/Cooling

#### **SPECIFICATIONS**

TECHNICAL		
Hot Side Temperature (°C)	85°C	110°C
Qmax (Watts)	9.7W	64W
Delta Tmax (°C)	87°C	94°C
Imax (Amps)	3.8A	3.8A
Vmax (Volts)	4.1V	4.4 V
Module Resistance (Ohms)	1.11 Ohms	1.22 Ohms

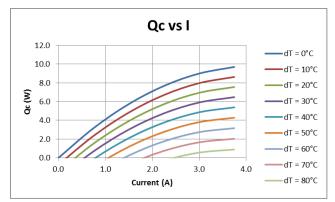
SUFFIX	THICKNESS (PRIOR TO TINNING)	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
TA	0.185"±0.010"	0.001"/0.001"	Lapped	Lapped	6"
ТВ	0.185"±0.0005"	0.0005"/0.0005"	Lapped	Lapped	6"

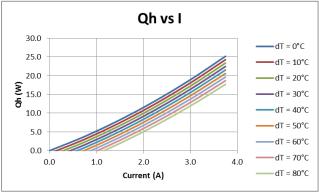
#### **SEALING OPTIONS**

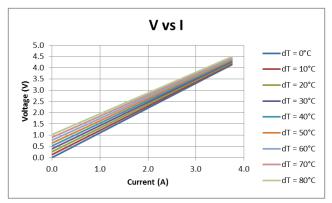
SUFFIX	SEALANT	COLOR	TEMP RANGE	DESCRIPTION
RT	RTV	Clear	-60 to 204 °C	Non-corrosive, silicone adhesive
EP	Ероху	Black	-55 to 150 °C	Low density syntactic foam epoxy encapsulant
RL	RTV	Clear	-45 to 200 °C	silicone adhesive ,Low outgassing application

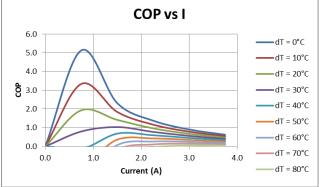


#### Performance Curves at Th = 85°C

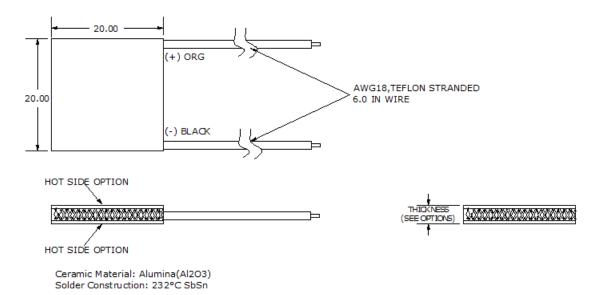








### **Mechanical Drawing**





#### **NOTES**

- 1. Max Operating Temperature: 150°C
- 2. Do not exceed Imax or Vmax when operating module
- 3. Reference assembly guidelines for recommended installation

#### LAIRD-ETS-ET4,31,F1,2020 DATA-SHEET-101416

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